

REMARKS

Claims 1, 2, 5-6 and 11-22 are pending in this application. Claims 1, 2 and 13-18 are withdrawn. By this Amendment, claims 3, 4 and 7-10 are canceled, claim 5 is amended to incorporate the features of claim 10 and additional features; claims 11 and 12 are amended to incorporate the features of claim 5; claim 6 is amended for clarity; and claims 19-22 are added. No new matter is added by this Amendment.

I. Rejection Under 35 U.S.C. §103(a)

Claims 3-12 are rejected under 35 U.S.C. §103(a) over U.S. Publication No. 2002/0177243 (Matsuura) in combination with U.S. Publication No. 2003/0178660 (Schmid), U.S. Publication No. 2003/0230773 (Horii), Japanese Patent No. 411087336 (Kimura); and U.S. Publication No. 2002/0001165 (Yamamichi). This rejection is respectfully traversed.

Independent claim 5 recites a method of manufacturing a ferroelectric layer comprising forming a first ferroelectric section in which crystal defects are intentionally created, by using a first material used for forming a ferroelectric in which part of substances in a stoichiometric composition is absent; and forming, over the first ferroelectric section, a second ferroelectric section which has less crystal defects than the first ferroelectric section by using a second material used for forming a ferroelectric which is closer to the stoichiometric composition compared to the ferroelectric which is formed by using the first material.

Claim 6 depends from claim 5 and adds forming a third ferroelectric section including space charges generated by causing a crystal defect to occur over the second ferroelectric section, the polarities of the space charges in the first ferroelectric section and the third ferroelectric section being different from each other.

Claim 11 recites a method of manufacturing a ferroelectric layer, comprising forming a first ferroelectric section in which crystal defects are intentionally created, by performing

crystallization heat treatment for first oxygen partial pressure, and forming a second ferroelectric section which has less crystal defects than the first ferroelectric section, by performing crystallization heat treatment for second oxygen partial pressure which is greater than the first oxygen partial pressure.

Claim 12 recites a method of manufacturing a ferroelectric layer, comprising forming a first ferroelectric section in which crystal defects are intentionally formed by introducing impurities, and forming a second ferroelectric section which has less crystal defects than the first ferroelectric section.

Matsuura is directed to reducing crystal defects. However, the claims 5, 11 and 12 recite intentionally forming crystal defects.

Further, Matsuura does not disclose, teach or suggest space electric charges, as recited in claim 6.

Furthermore, Matsuura teaches forming a ferroelectric layer, which constitutes multiple layers but does not teach or suggest that the number of crystal defects formed in each layer of the ferroelectric layer is different, as recited in claims 5, 11 and 12.

Schmid, Horii, Kimura, and/or Yamamichi, in any combination, do not remedy the deficiencies of Matsuura discussed above.

Thus, one skilled in the art would not have achieved the present claims by combining the references as suggested by the Office Action. That is, any combination of Matsuura, Schmid, Horii, Kimura, and/or Yamamichi, would not render obvious claims 5, 11 and 12, as well as the claims depending therefrom. Claim 6 is allowable at least for the same reason as claim 5 in addition to the novel features it recites.

Withdrawal of the rejection is requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the pending claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:

Amendment Transmittal

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